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July 19, 1993

Mr. William F. Caton  
Acting Secretary  
Federal Communications Commission  
1919 M Street, N.W.  
Washington, D.C. 20554

Re: Preparation for International  
Telecommunication Union World  
Radiocommunication Conference  
(ET Docket No. 93-198)

Dear Mr. Caton:

On behalf of the International Small Satellite Organization (ISSO), I am transmitting herewith an original and nine copies of its comments in the above-referenced proceeding.

Should there be any questions concerning this matter, kindly communicate with the undersigned.

Sincerely,

  
Jill Abeshouse Stern

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Enclosures

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JUL 19 1993

Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554

FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

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In the Matter of )  
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Preparation for International )  
Telecommunication Union )  
World Radiocommunication )  
Conferences )  
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ET Docket No. 93-198

**COMMENTS OF THE  
INTERNATIONAL SMALL  
SATELLITE ORGANIZATION**

The International Small Satellite Organization (ISSO), by its attorney, submits comments with respect to the Commission's Notice of Inquiry (NOI) in preparation for the 1993 International Telecommunication Union World Radiocommunication Conference (WRC-93) and future conferences.

I.  
INTRODUCTION

ISSO is an industry association, founded in 1991, that represents companies, large and small, seeking to further commercial opportunities for small satellites and launch vehicles.<sup>1/</sup> ISSO's members include manufacturers of small satellites, launch vehicles, ground equipment and subsystems; providers of launch

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<sup>1/</sup> While small satellites have been variously defined by such factors as cost, weight and size, they are generally characterized by the use of advanced technology and management techniques to reduce the cost of space systems.

services; state launch sites; and providers and users of small satellite services. These entities are actively pursuing or considering business activities involving small satellites and launch vehicles.

Small satellites are uniquely suited to provide a variety of new and innovative communication and information services to the public, in a cost-effective manner, within the United States and worldwide. Among the proposed uses of small satellites are global voice and data communications (to hand-held and/or vehicular terminals); direct broadcasting; and remote-sensing. In the United States, applications are now pending for authority to provide these services.<sup>2/</sup> U.S. satellite and launch vehicle companies are also actively pursuing international business opportunities, involving the export of small satellite hardware and/or services to other countries.

The proposed small satellite and launch activities are also important for other national policy goals, including U.S. global competitiveness in the high technology area. These activities represent a substantial business opportunity for satellite service providers as well as the related aerospace and launch industries.

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<sup>2/</sup> In addition to the "big" and "little" LEO applications, which propose to use constellations of small, low earth orbiting satellites to provide mobile data and/or voice communications, applications have also been filed with the FCC for direct broadcasting and remote sensing services using small satellites.

As a practical matter, the potential benefits offered by small satellites will not be realized unless adequate spectrum is assured for new services, particularly mobile satellite and earth-exploration satellite services. In addition, other international issues relating to implementation of small satellite systems, including low earth orbiting systems, must be quickly and effectively resolved to ensure the viability of these systems.

For these reasons, ISSO strongly recommends, on behalf of its members, that the United States move forward at WRC-93 to ensure that all relevant issues relating to implementation of non-geostationary mobile satellite and space services are included on the agenda for the next conference.

## II. MOBILE SATELLITE SERVICE

While WARC-92 established the foundation for implementing non-geostationary MSS systems, this was only the first step. The U.S. must continue to place a high-priority on implementation of the LEO systems, and ensure that the remaining international issues are addressed expeditiously. Among the issues which must still be considered are the following: allocation of primary spectrum for feeder links for LEO MSS systems; availability of additional spectrum for expansion of LEO MSS systems; further relaxation of the power-flux density limit in the 2483.5-2500 MHz band.

With respect to the mobile satellite service, it is critical that sufficient spectrum be provided for introduction and future expansion of low earth orbit satellite systems. There is strong interest in additional spectrum among the U.S. companies that are actively pursuing development of the LEO systems. These systems represent a substantial business opportunity for U.S. companies -- in terms of both satellite "hardware" and services. Adequate spectrum must be made available to ensure that these systems can be implemented successfully, and to accommodate future growth. The negotiated rulemaking process for the big LEOs vividly illustrated the difficulties presented by the limited spectrum now available in terms of accommodating multiple U.S. and international systems.

While adequate spectrum is a primary concern, implementation of viable U.S. systems also depends upon resolution of the other issues noted above, including feeder links and power-flux density limits. It is important that these critical implementation issues be resolved as expeditiously as possible.

### III. EARTH-EXPLORATION SATELLITE SERVICE

The NOI indicates that additional spectrum allocations for space services, including worldwide primary allocations for earth-exploration satellite services, will be considered at upcoming conferences. ISSO strongly recommends that allocation

of additional spectrum for earth-exploration satellite services be considered at the earliest possible time.

Since WARC-92, there has been increasing commercial interest in the development of private remote sensing satellite systems.<sup>3/</sup> Data from such systems is potentially useful for a broad range of commercial and governmental activities, including global change research, mineral exploration, farming, media coverage and land-use planning. At least two companies have recently announced plans to implement private remote sensing satellite systems using small low earth orbiting satellites.

In order to encourage growth of the emerging commercial remote sensing industry, adequate spectrum must be assured. ISSO recommends that additional spectrum for the earth-exploration satellite service, and related issues, be placed on the agenda at WRC-93.

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<sup>3/</sup> A remote-sensing space system is defined as "any instrument or device or combination thereof and any related ground based facilities capable of sensing the Earth's surface from space by making use of the properties of electromagnetic waves emitted, reflected or diffracted by the sensed objects." 15 C.F.R. §960.3. This corresponds to the FCC's

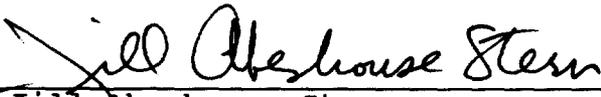
Conclusion

The upcoming World Radiocommunication Conferences provide a critical opportunity for the United States to promote the development of the mobile satellite service and emerging space services such as the earth-exploration satellite service. In order to ensure that the benefits of these new, innovative services are realized, ISSO recommends that the United States establish a specific agenda at WRC-93 for addressing the spectrum allocation and other issues that relate to implementation of these services.

Respectfully submitted,

INTERNATIONAL SMALL  
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